AMENDMENTS TO THE SPECIFICATION

At page 1 please replace the paragraph commencing at line 9 with the following amended paragraph:

This application is related to ~~the~~ U.S. Patent ~~a~~Application, Ser. No. 09/840,266 ~~Attorney Docket Number 00P7879US~~, entitled "Method and System for Automatically Detecting Lung Nodules from High Resolution Computed Tomography (HRCT) Images", filed on April 23, 2001, which is commonly assigned ~~and concurrently filed~~ herewith, and the disclosure of which is incorporated herein by reference. This application is also related to U.S. Patent Application Ser. No. 09/606,564, entitled "Computer-aided Diagnosis of Three Dimensional digital image data", filed on June 29, 2000, and U.S. Patent No. 6,697,506 ~~Ser. No. 09/271,471~~, entitled "Mark-Free Computer-Assisted Diagnosis Method and System for Assisting Diagnosis of Abnormalities in Digital Medical Images Using Diagnosis Based Image Enhancement", ~~filed on March 17, 1999~~ issued on February 24, 2002, which are commonly assigned herewith, and the disclosures of which are incorporated herein by reference.

At page 15 please replace the paragraph commencing at line 3 with the following amended paragraph:

Whether the volume of interest to be examined is determined by the user or by the automatic detection method, the automatic segmentation method automatically segments any object in the lungs at that position. The object of interest may be a lung nodule, or may correspond to an airway wall, vessel, or other anatomical structure, which appears as a bright opacity in CT images. The ICAD system 100 automatically performs an adaptive threshold operation based upon automatic local histogram analysis to segment

the object of interest (see the above referenced application, Ser. No. 09/840,266 ~~Attorney Docket Number 00P7879US~~, entitled "Method and System for Automatically Detecting Lung Nodules from High Resolution Computed Tomography (HRCT) Images"), and then measures and characterizes the object. Such measurements and characterizations are shown in the pop-up window 600 of FIG. 6.

At page 15 please replace the paragraph commencing at line 19 with the following amended paragraph:

Once the candidate object has been segmented, properties of the candidate object are measured. These measurements include, for example, the object's centroid, diameter, volume, circularity, sphericity, and average intensity, as shown in the pop-up window of FIG. 6. Anatomical knowledge is used to reason about the likelihood that the object of interest corresponds to a nodule. The CAD system 100 computes a confidence measurement indicating the CAD system's estimate of the likelihood that the object is a nodule. These measurements are described in the above referenced application, Ser. No. 09/840,266 ~~Attorney Docket Number 00P7879US~~, entitled "Method and System for Automatically Detecting Lung Nodules from High Resolution Computed Tomography (HRCT) Images".

At page 16 please replace the paragraph commencing at line 23 with the following amended paragraph:

"Fly-around" is a cine loop, which gives a quick, very natural visualization of the volume surrounding an object of interest. Each frame of the cine is a small slice of the data, taken at slightly different angles, centered at the point of interest. The cine gives an effect somewhat like flying around the object. This visualization allows the physician to

very quickly discover the three-dimensional shape of the object and whether the object has any connecting vessels, without requiring any additional decisions such as segmentation thresholds or viewing angles. In a very short period of time, the user can determine whether an area can be safely dismissed from concern, or warrants further investigation as a lung nodule. Fly-around is described in the above referenced application, ~~U.S.~~ Serial No. 09/606,564, entitled "Computer-Aided Diagnosis Method for Aiding Diagnosis of Three Dimensional Digital Image Data".

At page 18 please replace the paragraph commencing at line 6 with the following amended paragraph:

The result of the automatic segmentation is shown in a separate window (the pop-up window 60<u>0</u> of FIG. 6) as a shaded surface display or a volume rendering. Significant adjacent anatomical structures, such as blood vessels and the chest wall, are also shown, giving an intuitive understanding of the shape and position of the object of interest. The segmented object is shown in one color, whereas the surrounding tissues are shown in a contrasting color. This allows the physician to see the nodule in conjunction with its surroundings, and to verify that that the system's automatic segmentation is valid.

At page 21 please replace the paragraph commencing at line 17 with the following amended paragraph:

The user locates/selects an anatomical structure of interest (hereinafter "structure of interest") to be examined by simply pointing to the structure of interest using the selection device (step 115). Alternatively<u> (as indicated by reference character "A")</u>, the user can perform the steps illustrated with respect to FIG. 3 below, if the user decides to examine previously detected structures of interest.

At page 22 please replace the paragraph commencing at line 7 with the following amended paragraph:

In the back-end, the segmentation device 170 automatically segments the structure of interest based on local histogram analysis (step 121). This segmentation may be performed, for example, as described in the above referenced application, Ser. No. 09/840,266 ~~Attorney Docket Number 00P7879US~~, entitled "Method and System for Automatically Detecting Lung Nodules from High Resolution Computed Tomography (HRCT) Images. Also, at step 121, measurements of the object are computed by the measurement device 180 based on a segmentation result from the segmentation device 170. These measurements include the centroid, diameter, volume, sphericitiy, average and standard deviation of intensity. The back-end communicates the results to the front-end.

At page 25 please replace the paragraph commencing at line 20 with the following amended paragraph:

Volumetric data (e.g., three-dimensional data) for a set of the lungs is loaded (step 205). Previously saved candidate objects are loaded (step 210). These candidate objects can be obtained, for example, using two illustrative approaches: (1) manual detection, where the user examines the data and manually picks out the candidate objects as described in FIG. 2; and (2) automatic detection, wherein the computer detects candidate objects within the entire lung volume. The second approach may be implemented, for example, using a method such as the one described in the above referenced application, Ser. No. 09/840,266 ~~Attorney Docket Number 00P7879US~~, entitled "Method and System

for Automatically Detecting Lung Nodules from High Resolution Computed Tomography (HRCT) Images".

At page 26 please replace the paragraph commencing at line 20 with the following amended paragraph:

The user selects a candidate object to examine using the "Candidate Tour" menu bar (step 220). Alternatively (as indicated by reference character "A"), the user can perform the steps illustrated with respect to FIG. 2, if the user decides to examine new candidate objects.